

Year 7 - Technology Mandatory 2023

Please note: This course operates on a rotating cycle, where students complete three units of work throughout the year.

TERM 1

<div>TIMING</div> <div>Weeks: 1 – 11</div>	<div>Project One</div> <div>Robotics</div> <div>Context Area: Digital Technologies</div> <div>Students develop knowledge and skills in the use of algorithms in the use of a general-purpose programming language to design, produce and evaluate a system using a microcontroller. They document their skill-development tasks in a design and production folio.</div> <div>OR</div> <div>Grow and Thrive</div> <div>Context Area: Agriculture and Food Technologies</div> <div>Students investigate how managed environments are used to produce food and fibre. They will be introduced to basic food preparation skills. Through a range of design, experimentation and testing procedures students are set the challenge of creating a sustainable design solution for growing a vegetable, herb or fruit. They design, produce and manage and garden bed to grow their food crop. Students develop knowledge and understanding about WHS requirements on the school farm and kitchen. Students will program a Microbit microcontroller to test soil quality and moisture.</div> <div>OR</div> <div>Pinball Fever OR Steady Hand Game</div> <div>Context Area: Engineered Systems</div> <div>Students explore how force, motion or energy are used to design and produce a motion powered pinball game OR electronic steady hand game. They develop knowledge and understanding of and investigate how force is used in simple machines to propel parts the greatest distance OR how electrical energy is used to power a game. Students will program an Microbit microcontroller to design an electronic counter.</div>		
	<div>UNIT OVERVIEW</div>		<div>ASSESSMENT</div>
	<div>All Context Areas:</div> <div><div><div></div></div><div>designs, communicates and evaluates innovative ideas and creative solutions to authentic problems or opportunities</div><div><div></div></div><div>plans and manages the production of designed solutions</div><div><div></div></div><div>explains how people in technology related professions contribute to society now and into the future</div></div> <div>Digital Technologies:</div> <div><div><div></div></div><div>designs algorithms for digital solutions and implements them in a general-purpose programming language</div><div><div></div></div><div>explains how data is represented in digital systems and transmitted in networks</div></div> <div>Agriculture and Food Technologies:</div> <div><div><div></div></div><div>selects and safely applies a broad range of tools, materials and processes in the production of quality projects</div><div><div></div></div><div>investigates how food and fibre are produced in managed environments</div><div><div></div></div><div>explains how the characteristics and properties of food determine preparation techniques for healthy eating</div></div> <div>Engineered Systems:</div> <div><div><div></div></div><div>selects and safely applies a broad range of tools, materials and processes in the production of quality projects</div><div><div></div></div><div>explains how force, motion and energy are used in engineered systems</div></div>		

TERM 2

TIMING Weeks: 1 – 3	Australian Designers Designers play an important role in contributing to our quality of life. They are responsible for the development of all the products, systems and environments that people use daily. In this task, students explore the various design areas. Students choose a design area to research and complete a detailed profile on an Australian designer from the chosen design area.	
	UNIT OVERVIEW	ASSESSMENT
	<ul style="list-style-type: none"> explains how people in technology related professions contribute to society now and into the future 	Task Number: 1 Nature of Task: Written Research Task Percentage: 100% Week: Term 2, Week 3 Reported: Semester 1
TIMING Weeks: 4 – 10	Project Two Robotics Context Area: Digital Technologies Students develop knowledge and skills in the use of algorithms in the use of a general-purpose programming language to design, produce and evaluate a system using a microcontroller. They document their skill-development tasks in a design and production folio. OR Grow and Thrive Context Area: Agriculture and Food Technologies Students investigate how managed environments are used to produce food and fibre. They will be introduced to basic food preparation skills. Through a range of design, experimentation and testing procedures students are set the challenge of creating a sustainable design solution for growing a vegetable, herb or fruit. They design, produce and manage and garden bed to grow their food crop. Students develop knowledge and understanding about WHS requirements on the school farm and kitchen. Students will program a Microbit microcontroller to test soil quality and moisture. OR Pinball Fever OR Steady Hand Game Context Area: Engineered Systems Students explore how force, motion or energy are used to design and produce a motion powered pinball game OR electronic steady hand game. They develop knowledge and understanding of and investigate how force is used in simple machines to propel parts the greatest distance OR how electrical energy is used to power a game. Students will program an Microbit microcontroller to design an electronic counter.	
	UNIT OVERVIEW	ASSESSMENT

	<p>All Context Areas:</p> <ul style="list-style-type: none">• designs, communicates and evaluates innovative ideas and creative solutions to authentic problems or opportunities• plans and manages the production of designed solutions• explains how people in technology related professions contribute to society now and into the future <p>Digital Technologies:</p> <ul style="list-style-type: none">• designs algorithms for digital solutions and implements them in a general-purpose programming language• explains how data is represented in digital systems and transmitted in networks <p>Agriculture and Food Technologies:</p> <ul style="list-style-type: none">• selects and safely applies a broad range of tools, materials and processes in the production of quality projects• investigates how food and fibre are produced in managed environments• explains how the characteristics and properties of food determine preparation techniques for healthy eating <p>Engineered Systems:</p> <ul style="list-style-type: none">• selects and safely applies a broad range of tools, materials and processes in the production of quality projects• explains how force, motion and energy are used in engineered systems	
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TERM 3

TIMING Weeks: 1 – 6	See above	
	UNIT OVERVIEW	ASSESSMENT
	See above	Task Number: 2 Nature of Task: Written Portfolio and Practical Product Percentage: 100% Week: Term 3, Week 6 Reported: Semester 2
TIMING Weeks: 7 – 10	Project Three Robotics Context Area: Digital Technologies Students develop knowledge and skills in the use of algorithms in the use of a general-purpose programming language to design, produce and evaluate a system using a microcontroller. They document their skill-development tasks in a design and production folio. OR Grow and Thrive Context Area: Agriculture and Food Technologies Students investigate how managed environments are used to produce food and fibre. They will be introduced to basic food preparation skills. Through a range of design, experimentation and testing procedures students are set the challenge of creating a sustainable design solution for growing a vegetable, herb or fruit. They design, produce and manage a garden bed to grow their food crop. Students develop knowledge and understanding about WHS requirements on the school farm and kitchen. Students will program a Microbit microcontroller to test soil quality and moisture. OR Pinball Fever OR Steady Hand Game Context Area: Engineered Systems Students explore how force, motion or energy are used to design and produce a motion powered pinball game OR electronic steady hand game. They develop knowledge and understanding of and investigate how force is used in simple machines to propel parts the greatest distance OR how electrical energy is used to power a game. Students will program an Microbit microcontroller to design an electronic counter.	
	UNIT OVERVIEW	ASSESSMENT

	<p>All Context Areas:</p> <ul style="list-style-type: none">• designs, communicates and evaluates innovative ideas and creative solutions to authentic problems or opportunities• plans and manages the production of designed solutions• explains how people in technology related professions contribute to society now and into the future <p>Digital Technologies:</p> <ul style="list-style-type: none">• designs algorithms for digital solutions and implements them in a general-purpose programming language• explains how data is represented in digital systems and transmitted in networks <p>Agriculture and Food Technologies:</p> <ul style="list-style-type: none">• selects and safely applies a broad range of tools, materials and processes in the production of quality projects• investigates how food and fibre are produced in managed environments• explains how the characteristics and properties of food determine preparation techniques for healthy eating <p>Engineered Systems:</p> <ul style="list-style-type: none">• selects and safely applies a broad range of tools, materials and processes in the production of quality projects <p>explains how force, motion and energy are used in engineered systems</p>	
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TERM 4

TIMING Weeks: 1 – 10	See above	
	UNIT OVERVIEW	ASSESSMENT
	See above	